

EDMAN

January 15, 1953

Dear Jack:

Thank you for returning the reprints, and especially for your critical appreciation of Cell Genetics. Neither the logic nor the rhetoric of the latter has entirely pleased me; I can only plead that I am still floundering in the sea of uncritical and traditional thinking out of which I am trying to swim. If you are interested enough to discuss genetics with me, I'll play the same game with the rhetoric. You are quite right about commas, and merits... merits. A born writer, I hope, is able to avoid these slips and awkward constructions before they happen. I have to go over my writing and extract them later, and only hope not to have missed too many.

"left a plethora of terms adrift" doesn't sound quite right; left adrift a plethora of terms might have been better, but not much. Still I support the usage "plethora of terms"; it's the "left adrift" that makes an unhappy phrase.

"rests squarely on the hiatus" means exactly what it says (though you refused to believe it). Again, this is not a very pleasant construction--Fowler might have called it an example of belabored subtlety.

If I may clarify the construction, ~~xxxxxxx~~ "or in the absence of a micronucleus" is a parenthesis, and should have been marked as such. In ~~xx~~ a sense, if there is no current micronucleus, the genotype is null. I'd better requote the paragraph: "Under certain conditions (or in the absence of a micronucleus) the macronucleus will be regenerated from fragments of the previous macronucleus, irrespective(ly?) of the genotype of the current micronucleus." The more I look at this, the worse it ~~looks~~ seems, and I am left with the conclusion that no one else is going to understand it who did not already. What I meant was that the macronucleus might regenerate from the old macron. so that its ~~xxxxxxxx~~ constitution could be different from the current micron. This can happen even if there is no micronucleus at all. Ordinarily, the macronucleus is reconstituted from the new micronucleus at each act of conjugation or autogamy that would produce a new micronuclear genotype. As it stands, the paragraph seems to read that regeneration occurs irrespective of the micronuclear genotype, but this was not intended. I must have been so preoccupied with trying to formulate some of these ideas for myself that I did not make sure that their meaning was fully given in the writing.

#Radio theory" as you call it is quite the fad in genetics, and everything else, but under the name of "Cybernetics".

"candidate whose availability..." was written about the time of the convention. It sounds rather stale now, doesn't it.

It was the philosophical possibilities, and not the technical findings of course, that led me to pick out these papers. I am a little troubled already by some inconsistencies. The review itself has many of them; e.g., "genetic diseases simulating viroses might result from the recrudescence of inherited latent viruses...", when the whole point of the review was to emphasize the formal equivalences of these views, rather than the correctness of one interpretation over the other. In the midst of my lectures while trying to decry what you called dogmatism, I look over my shoulders and find myself doing ~~the~~ much the same things that are deplored. In practice it is very difficult to do any work without idealizing one's concepts. We frame our experiments on the basis of very insecure working hypotheses; in order to do them, we have to place the full weight of our confidence on them.

If your comment on dogmatism refers to the discussion of "replica plating", as I think it does, I think I have to mention some of the history of this problem. There is a tremendous amount of uncritical work, some of it over reputable signatures, on adaptive mechanisms in bacteria. Most of it is bad because the critical hypotheses are never clearly stated. I think no one need dispute that spontaneous mutations and natural selection explain most of the adaptive phenomena that have been carefully studied. It is incorrect to generalize, as I did, that this is the only mechanism that can operate. The paper is written in this tone in order to emphasize the essentiality of disqualifying this mechanism in detail before adopting poorly founded alternatives. It is not a studied discussion of "spontaneous mutation" such as I have, betimes, put elsewhere. Mutations are, of course, never "spontaneous", even in the restricted sense in which some natural phenomena are (viz. radioactive disintegration). There must be a material chemical reaction in the cell underlying the genetic change; the trouble is, we know next to nothing of what these reactions are, or how to control them. Unfortunately many bacteriologists, having discovered that they could select for certain mutant types, thought they had induced the mutations. In every case, so far, where the question has been properly put, these have turned out to be selected, and not induced. A little progress is being made in the "experimental control of spontaneous mutation", but no so much that we can approach a particular gene and tell it when to change. Until we have achieved such a control, the mutations might as well be spontaneous. I would agree that "spontaneous mutation" has been made an absolute ideal, by H. J. Muller for example, but this is an overcompensatory response to even less sound claims of Lamarckian effects.

I am not at all diffident about my corpus; in fact I have taken quite seriously the kind of advice you gave and am approaching the 2 cwt. level you suggested. I had the same impressions of that photograph as you did; it is a caricature, and was selected by ~~me~~ one of my colleagues (not Buzzati-Traverso) with a certain friendly malice. I enjoyed your poem, without fully appreciating its relevance-- not that this is needed.

Thanks for putting me straight about your feelings on the academic life (fortunately indeed I found this job which is research, and not too bad financially either); no, I've never heard of any academic job below an assistant professorship (and then some, at times and places) that would be likely to match yours. I should like to teach myself, more than a few hours a week.

Sincerely,

Joshua Lederberg
Joshua